REMARKS

Favorable reconsideration of this application in the light of the following amendments and remarks is respectfully requested.

The instant invention provides a system in which tags are identified in an efficient manner. A single transmission of an interrogation signal can be used to identify a tag within range. This interrogation signal has a number of portions corresponding to the number of bits (or bit sequences) of the identification word for each tag. The portions have two possible signal formats, and the format used depends on the responses received from the tags.

As discussed below, the claims have been amended so that all independent claims recite more clearly the dependency of the format of the interrogation signal portion on the tag responses.

Claim rejections under 35 USC 103(a)

Independent claims 1 and 10 stand rejected under 35 USC 103 (a) as unpatentable over Denne et al. (US 4 691 202, "Denne") in view of Dodd (US 5 339 073, "Dodd") and further in view of Walter et al. (US 5 856 788, "Walter").

As previously presented, Denne discloses a system in which a general interrogation signal is sent out, and a tag in range replies by sending its identity to the transceiver. The system operates by repeatedly sending messages until only one tag replies.

The Examiner has recognised that Denne fails to disclose that "each portion of the interrogation signal determined by the transponder is dependent on the response of the tag".

However, the Examiner maintains that Denne teaches "an interrogation signal comprising a plurality of portions, wherein each portion is associated with a predetermined bit, or bit sequence, of the identification word .. and is used to ... identify

... the presence of a tag ... having a given value at the predetermined bit, or bit sequence". The Examiner refers to Figure 1 of Denne in this respect. The frame structure includes a single area (between the control byte and the error correction byte) which is used for a tag to provide its identity in response to a general interrogation signal. This area is not divided into portions, each associated with an individual bit or bit sequence.

The system of Denne does not interrogate identification words bit by bit. Tags are not deactivated based on analysis of signal portions representing individual bits (or bit sequences) of the identification word.

Dodd does disclose a system in which interrogation is performed on the basis of bits or groups of bits. The Examiner now recognises that Dodd fails to teach deactivating each tag when not having the given value of the identification word. Instead, a progressively longer interrogation word is sent out, and a large number of progressively more complicated interrogation signals are required before a single tag can be identified.

Walter discloses bitwise interrogation of an identification number of tags in a field of the interrogating device. Each tag has an "awake" and a "sleep" state, and these are used to control whether or not the tag responds to interrogation messages. Each tag also has an "isolated" and a "not isolated" state, and these are used to indicate whether or not the tag has already been interrogated (column 4 lines14-42).

The interrogation of the tags involves requesting each tag with a "1" in a given bit position to respond. From the responses (or lack of response), the transceiver works out whether or not tags are present satisfying this requirement, and instructs tags to SLEEP if appropriate. The same request is then sent out for the next bit. Whilst the transceiver does process the information received, it does not change the interrogation signal in response to this information.

When the transceiver processes the information received, it decides if tags need to be placed into the SLEEP state, to allow the interrogation to continue. If there is at least

one tag with a "1" in the given bit position, the "reader directs the tags with a 0 ... to go to the SLEEP state" (col 5 lines 26-28).

Claims 1 and 10 have been amended to require that each portion of the interrogation signal "has two possible signal formats" (for example short or long, as shown in Figure 3), and the format used depends on the responses received.

This approach has a number of advantages.

The system now claimed enables the tags to determine information about the other tag responses from the signal format used. In particular, a tag can go into the quiescent mode automatically in dependence on the signal format it detects, without needing to be instructed to do so. For example, "where the MW-1 window *[the long format]* is not transmitted, any active tag that has a 1 in that position is programmed to go quiescent until a 'New Sweep Pattern' is received" (page 7 lines 8-10). Thus, the different signal formats can be detected by the tags and can be used by the tags to control their transition into the quiescent state.

The system of the invention also enables very high efficiency of the interrogation procedure. For example, the length of the interrogation signal can be kept to a minimum. In particular, as soon as a response is received to a one format of signal portion (for example a shorter interrogation signal portion), the portion can end, and the interrogation signal can proceed to the next portion. This provides an efficient and high speed identification of individual tags.

The invention as now claimed thus provides a system which enables individual tags to be identified with one interrogation signal, and which allows the tags to change state in response to the interrogation signal itself, thereby simplifying the procedure for placing tags into a quiescent mode.

Claim 18 already requires signal portions of a first duration or an extended duration. In respect of this aspect of claim 18, the Examiner has referred to Walter at column 4 lines 27-37.

There is no disclosure in this passage of different formats of interrogation signal portion. Instead, each bit is interrogated in turn with a single type of interrogation signal, and the replies are processed in order to determine whether or not some tags need to be placed into the SLEEP state, using further instructions.

There is no disclosure of the adaptive nature of the interrogation signal portions, as outlined above, in Denne, Dodd or Walter, or indeed in Wood Jr. (US 6 466 771) or Pidwerbetsky (US 6 046 683).

The above arguments are limited to the independent claims, and detailed arguments are not presented in respect of the dependent claims. However, the arguments of the Examiner should not be taken to be accepted.

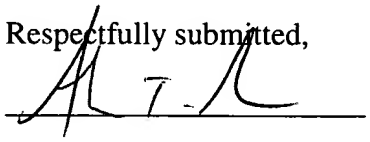
In view of the arguments and amendments above, we submit that this application is in order for allowance. Such action is therefore solicited.

In view of the arguments and amendments above, we submit that this application is in order for allowance. Such action is therefore solicited. If any extension is required, applicant hereby petitions for same and requests that any extension or other fee required may be charged to deposit account number 19-4972.

If the Examiner has any questions as to the allowability of the currently pending claims or if there are any defects which need to be corrected, the Examiner is invited to speak to the Applicant's counsel at the telephone number given below.

DATE: October 8, 2004

Respectfully submitted,



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